

SPECIFICATION : DEMOUNTABLE STOP LOG FLOOD BARRIERS

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Removable Aluminum stop-log flood control barriers to work on level thresholds with no step.
- B. Flood Barrier system is to be FM Global Certified to Flood Abatement Standard 2510.

1.02 SUBMITTALS

A. Submit the following:

- 1. Manufactures data including installation and maintenance instructions
- 2. Calculations prepared by a Licensed Professional Engineer registered in the RELEVANT STATE proving the barriers' ability to withstand the design pressure loading
- 3. Dimensional plans and elevations, sections, connections and anchorage, and parts list

1.03 REFERENCE STANDARDS

- A. ASCE/ SEI 24-05, 6.2 Dry Proofing
- B. ASCE 24-05 (Flood Resistant Design and Construction)
- C. FEMA Technical Bulletin 3-93 Non-Residential Flood proofing
- D. FEMA Flood Proofing Non-Residential Structures #102
- E. FEMA Recommendations on Dry Proofing
- G. NFIP Title 44 US Code of Federal Regulations, Section 60.3
- H. SEI / ASCE 7-02 – Minimum Design Loads for Buildings and other Structures.
- I. AISE Manual and Specifications.
- J. Aluminum Construction Manual (USA).
- K. BS EN 1990 (UK National Annex for Eurocode – Basis of Structural Design)
- L. BS EN 1999-1-1:2009 (Design of Aluminium Structures) (See here for full listings and <http://eurocodes.jrc.ec.europa.eu/showpage.php?id=133>)
- M. BS EN 1993-1-8 (Design of Joints).
- N. BS EN 1993-1-9 (Fatigue)
- O. BS 8539:2012 Code of practice for the selection and installation of post-installed anchors in concrete and masonry.

1.04 QUALIFICATIONS

- A. The manufacturer of the flood gates shall have provided removable stop plank flood barriers on at least five (5) installations similar to the requirements of this project
- B. Minimum Qualifications: Manufacturer must demonstrate compliance and certification of a Quality Management System administered by the International Organization for Standardization (ISO). Documentation of current certification status to be provided upon request.

SPEC. SBS-US- REV0.1**PART 2 – PRODUCTS****2.01 – DEMOUNTABLE STOP LOG FLOOD CONTROL BARRIERS****A. Manufacturers**

1 Basis of Design is ‘Demountable Flood Barrier’ as manufactured by Flood Control International Inc, 7 Elk Street, Lower Level, New York, NY10007; Email enquiries@floodcontrolint.com Web: www.floodcontrolinternational.com

2 Substitutions: Not permitted.

B Equipment

1. Basis of Design is ‘Demountable Flood Barrier’ as manufactured by Flood Control International Inc
2. Flood control barrier shall provide an effective seal against short term and long term high water situations, to the protection level indicated on the drawings.
3. The flood barrier consist of permanently fixed end channels with removable aluminium beams with integral gaskets.
4. The flood barrier is to operate on a level threshold – no ramp, trough or step is to be allowed.
5. The flood barrier shall utilise only one set of clamps per span. Systems requiring individual beams to be fixed in place shall not be allowed
6. The flood barrier is to be pad-lockable in the open and closed positions (option)
7. Barrier beam installation and clamping is to be able to be undertaken from either side of the barrier.
8. The barrier is to be able to withstand flooding from either direction (on-seating or off-seating).
9. Flood barrier gaskets shall be easily replaceable.
10. The floodbarrier is to be operable on any smooth level impervious base such as concrete or level paving. Flood barrier systemns requiring a ground beam to be cast in across thresholds shall not be considered.

2.02 - DESIGN

A. Hydrostatic Pressure Resistance - Flood Barriers shall conform to the criteria for resisting lateral forces due to hydrostatic pressure from Freestanding Water as set forth by FEMA Technical Bulletin 3-93

B. Force Resistance - Flood Barriers shall conform to the criteria for resisting lateral forces due to moving flood waters at a minimum Velocity of 8 Feet per second, unless otherwise noted, as set forth by FEMA Technical Bulletin 3-93

C. Debris Impact Force Resistance - Flood Barriers shall conform to the criteria for resisting a 1000-pound object at minimum Velocity of 8 Feet per second unless otherwise noted, as prescribed by FEMA Technical Bulletin 3-9

2.03 - MATERIALS

1. Aluminum Beams: Made up from bolted Grade 6063-T6 Aluminum alloy and temper and not less than 0.125” wall thickness. Beam height to be 1ft minimum to reduce number of components required. Beams to weigh 5.5lbs per linear ft. max.
2. End Post Frames: Grade ST37 (S235 JR) galvanized steel
3. Sills: Level, smooth concrete or paving.
4. Finish on gate ends and beams may be polyester powder coated (option)

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5. Gaskets: Base gaskets shall be EPDM medium compression set gasket retained mechanically in the bottom of the lowest flood barrier beam. ¼" EPDM tube gaskets shall be fixed to every beam to form a watertight seal between beams when stacked. Vertical gaskets in the jambs shall be mechanically retained. All gaskets shall be field replaceable
6. Fasteners: all anchor bolts shall be stainless steel
7. Sealants: Sealants shall be a one part polysulphide gun-applied sealant and shall be compatible with all substrates and field applied in accordance with the manufacturers recommendations
8. Intermediate Post socket fixings: All socket fixings for the removable intermediate posts are to be grade 316 stainless steel. Sockets to be either
- A Embedded baseplates with integrated sockets. Stainless steel blanking bolts flush with top of baseplate when system is not in place.
 - B Drilled and epoxied proprietary stainless steel anchors, Hilti HIS-RN or equivalent for concrete surfaced foundations
 - C Drilled and epoxied stainless steel reinforcement bar anchors for concrete foundations with overlying pavement. Note – overlying pavement to be flush jointed and bedded on waterproof mortar.

PART 3 – PERFORMANCE**3.01 PERFORMANCE**

- A. The flood barriers are to withstand the design forces as outlined in this document
- B. The maximum amount of leakage to be permitted through the flood barrier is to be in accordance with PAS1188-4 equating to 2.7gallons per linear ft of barrier per hour

3.02 Examination / Preparation

- A. Do not begin installation until substrates have been properly prepared
- B. Surfaces to be clean solid and free from water and grease prior to fitting.
- C. Base materials shall be checked to be able to withstand the forces applied by the gate

3.03 Installation

- A. Install in accordance with manufacturer's installation instructions, approved shop drawings, shipping, handling and storage instructions
- B. Jambs and mullions shall be installed level, square, plumb and rigid.
- C. Only the designed and provided fixings are to be used in accordance with manufacturers installation instructions.
- D. Sealants to be applied per product application directions and in accordance with manufacturer's instructions.

3.04 Field Quality Control

- A. Flood barrier to be operated and field verified including the sealing surfaces to check they maintain the correct level of contact at all points.
- B. A 'paper pull-out test' to be performed on all sealing surfaces to ensure a tight fit
- C. Verify that the barrier assembly operates freely without undue force in installing and removing beams.
- D. Verify all anchors are installed correctly